CASE REPORT

Foreign body granulomatous reaction to endoluminal gas in pneumatosis intestinalis – a case report

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Abstract Pneumatosis intestinalis is a rare condition occurs in a wide variety of patients, some of whom require urgent surgery, while others can be observed with resolution of symptoms and radiographic findings. Most often the need for surgery is intestinal obstruction. We report a case of pneumatosis intestinalis with an abdominal mass causing obstruction. The histological surprise and the rarity of the obstruction is highlighted in this case report.

Keywords Pneumatosis · Pnuematosis cystoides intestinalis · Granuloma · Antroduodenal compression · Aerophagia · Intestinal obstruction

Introduction

Pneumatosis intestinalis is a rare condition occurring in a wide variety of patients, some of whom require urgent surgery, while others can be observed with complete resolution of symptoms. Most often, the need for surgery is intestinal obstruction. We report a case of pneumatosis intestinalis [1] with an abdominal mass causing obstruction.

Case report

A 29-year-old male patient from Nilgiris was admitted with complaints of excruciating pain in the upper abdomen. He had undergone surgery for duodenal ulcer perforation 2 years previously. There was no history of endoscopic procedure being done, aerophagy or ingestion of corrosives. On admission he was pale, dyspnoeic, with acute respiratory distress. He had a mass in the umbilical quadrant moving well with respiration and had guarding but no rigidity. His pulse rate rose from 118–132 per minute within an hour and his abdominal distention was increasing. His rectal examination revealed a roomy ballooning of rectum with no formed faeces. Fingerstall was not faeces or blood tinged. His blood results revealed leucocytosis and his electrolytes were abnormal. Erect abdominal X-ray revealed multiple gas shadows in the abdomen (retropneumoperitoneum) and it did not conform to air fluid levels of intestinal obstruction. His chest X-ray was normal and ultrasound abdomen revealed an intra-abdominal swelling without ascites or lymph nodes. Nasogastric aspirate was about 400 ml straw coloured fluid. Provisionally diagnosed as intestinal obstruction secondary to an underlying mass the patient was taken up for an emergency laparotomy.

At surgery, a thick walled cyst with antroduodenal compression (Fig. 1) leading on to intestinal obstruction with a classical collapsed distal segment (Fig. 2) with the

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Fig. 1 Intra-abdominal mass causing antroduodenal compression

Fig. 2 Collapsed distal segment

Fig. 3 Presence of multiple pneumatosis intestinalis

presence of multiple pneumatosis intestinalis (Fig. 3) was seen. The aspirate from the cyst was more than 1500 ml of serosanguinous fluid.

Procedure

The cyst was aspirated and resected, relieving the obstruction. The segment of bowel with pneumatosis was also resected (Fig. 4). The patient recovered remarkably well though we had to transfuse three units of blood perioperatively and in the immediate postoperative period.

The histopathological examination and culture of the cystic fluid were analysed. The culture revealed no growth but the histology was reactive granuloma.

Discussion

Pneumatosis intestinalis is different from pneumatosis cystoides intestinalis. Though both occur in adulthood

Fig. 4 Bowel segment with pneumatosis

and reveal multiple gas filled noncommunicating cysts, pneumatosis intestinalis occurs in subserosa and submucosa [2].

The mucosa and muscularis are normal in pneumatosis intestinalis. Whereas, in pneumatodes cystoides intestinalis gas filled noncommunicating cysts occurs predominantly in the colon [3] in subserosa and occasionally in submucosa. Pneumatosis intestinalis is again classified as primary and secondary. Primary pneumatosis intestinalis accounts for about 1/5 of all pneumatosis though pneumatosis itself is rare. Secondary pneumatosis on the other hand accounts for 4/5 of all pneumatosis and is secondary to ischaemia viz., necrotising enterocolitis, mesenteric vascular disease, trauma (sigmoidoscopy, biopsy, BE, postsurgical anastomosis), infection (primary infection, parasites, perforated jejunal) inflammation, inflammatory bowel disease, connective tissue disease especially scleroderma, whipple disease, pulmonary disease (COPD, artificial ventilation), colonic obstruction (air dissecting distally) etc. There are various opinions as to whether this condition is a disease or a symptom and there are various arguments

whether surgery itself is warranted or not [4]. But the general consensus is that in view of ischaemia and obstruction – if symptomatic, surgery has to be undertaken. Literature on such cystic masses causing obstruction is sparse. One of the largest series on pneumatosis has been reported by Knechtle et al [5]. But generally no significant contributing condition is seen. This reiterates the concept that laparotomy is indicated only in the presence of obstruction, perforation or ischaemia..

Conclusion

Pneumatosis intestinalis is different from pneumatosis cystoides intestinalis and it has to be borne in mind that cystic masses resulting from granulomatous reaction to endoluminal gas might result in obstruction and bowel ischaemia.

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